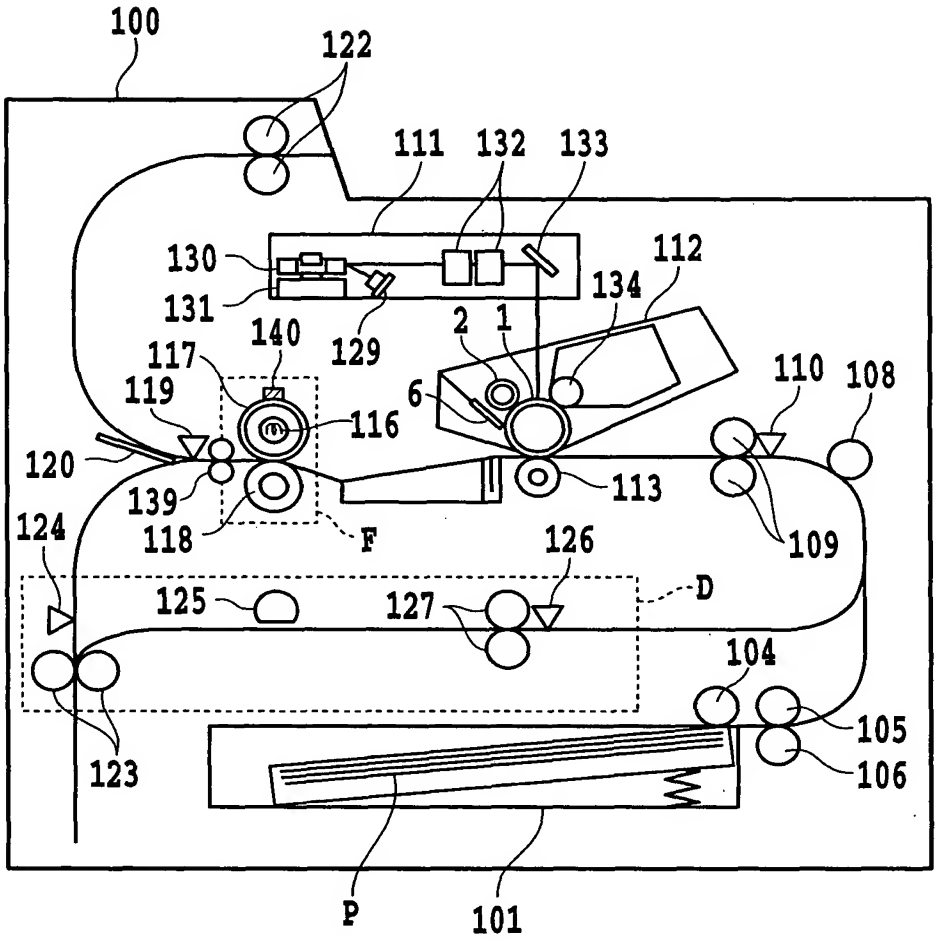

FIG.1
PRIOR ART

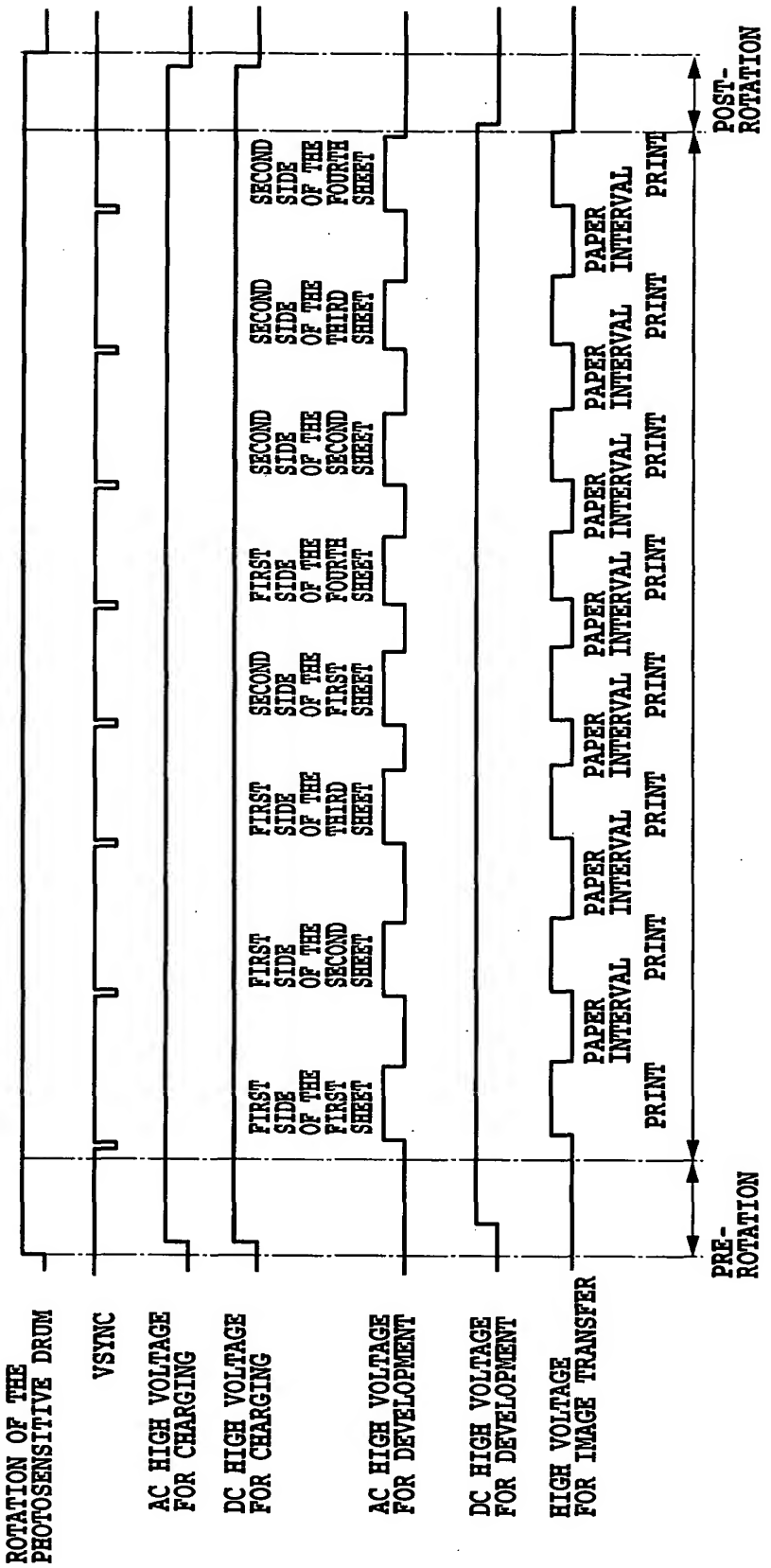

FIG.2
PRIOR ART

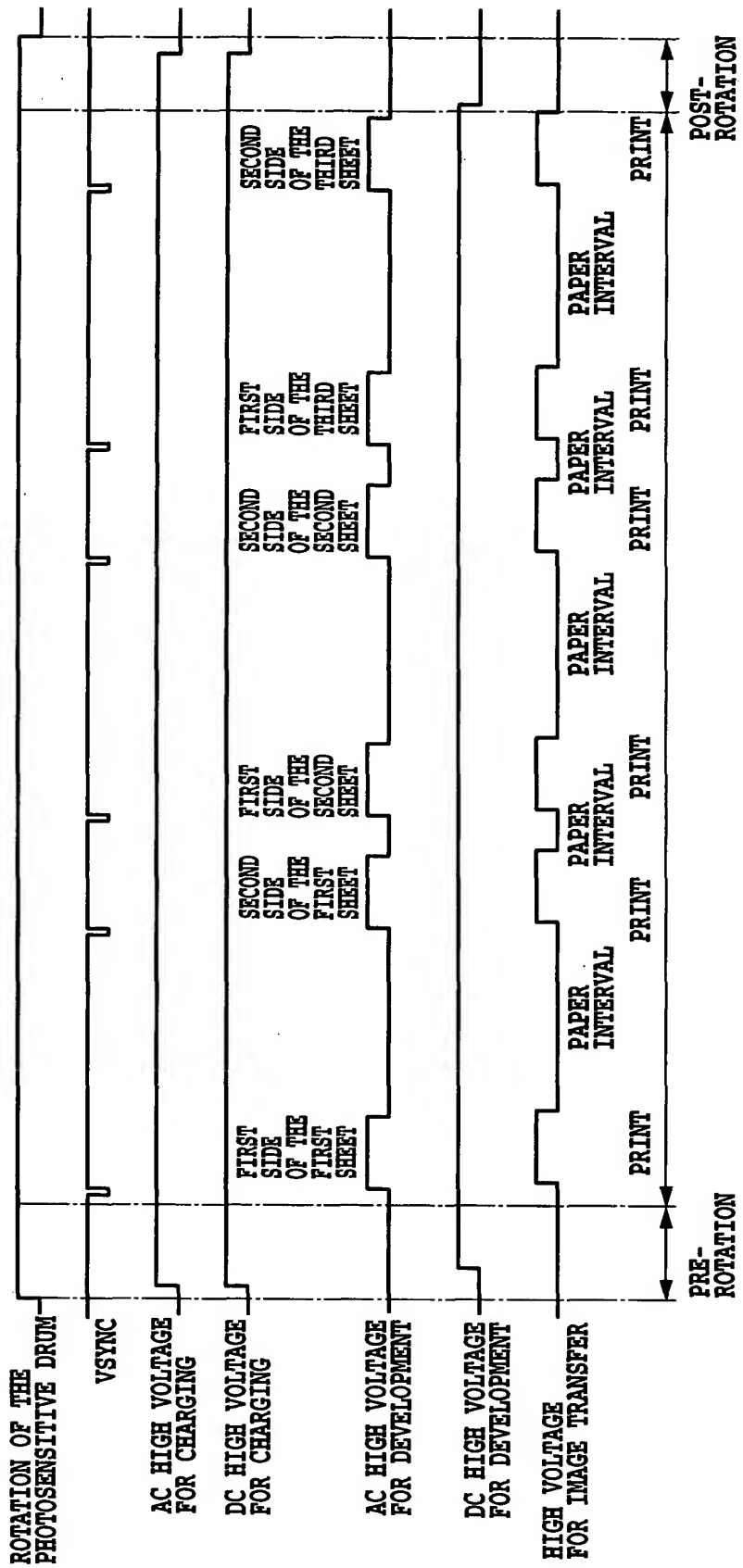

FIG.3
PRIOR ART

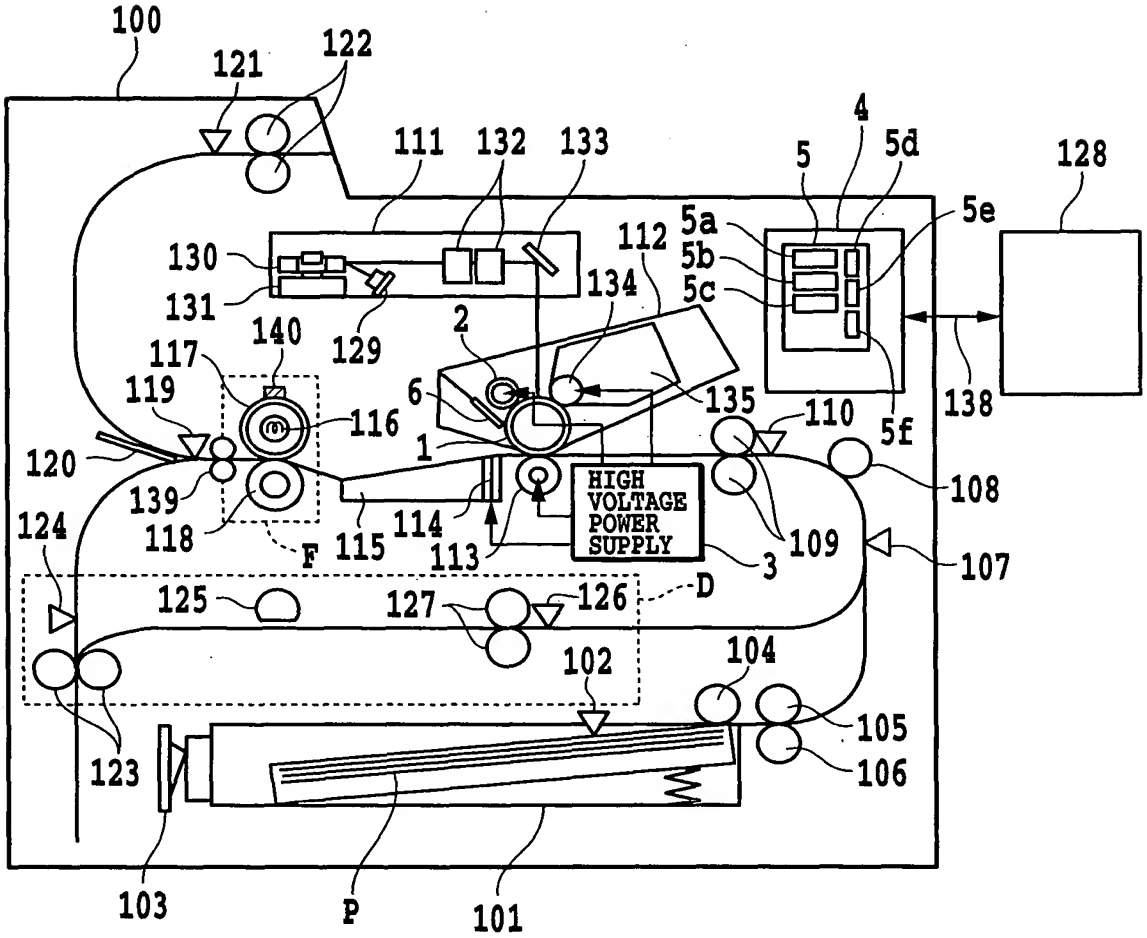
100
121
122
111
132
133
4
5
5d
128
5e
5a
5b
5c
112
130
131
129
134
2
140
117
119
116
6
135
110
5f
138
120
139
118
F
115
114
113
1
HIGH VOLTAGE POWER SUPPLY
3
108
109
107
124
125
127
126
D
102
104
105
106
123
103
P
101

FIG.4

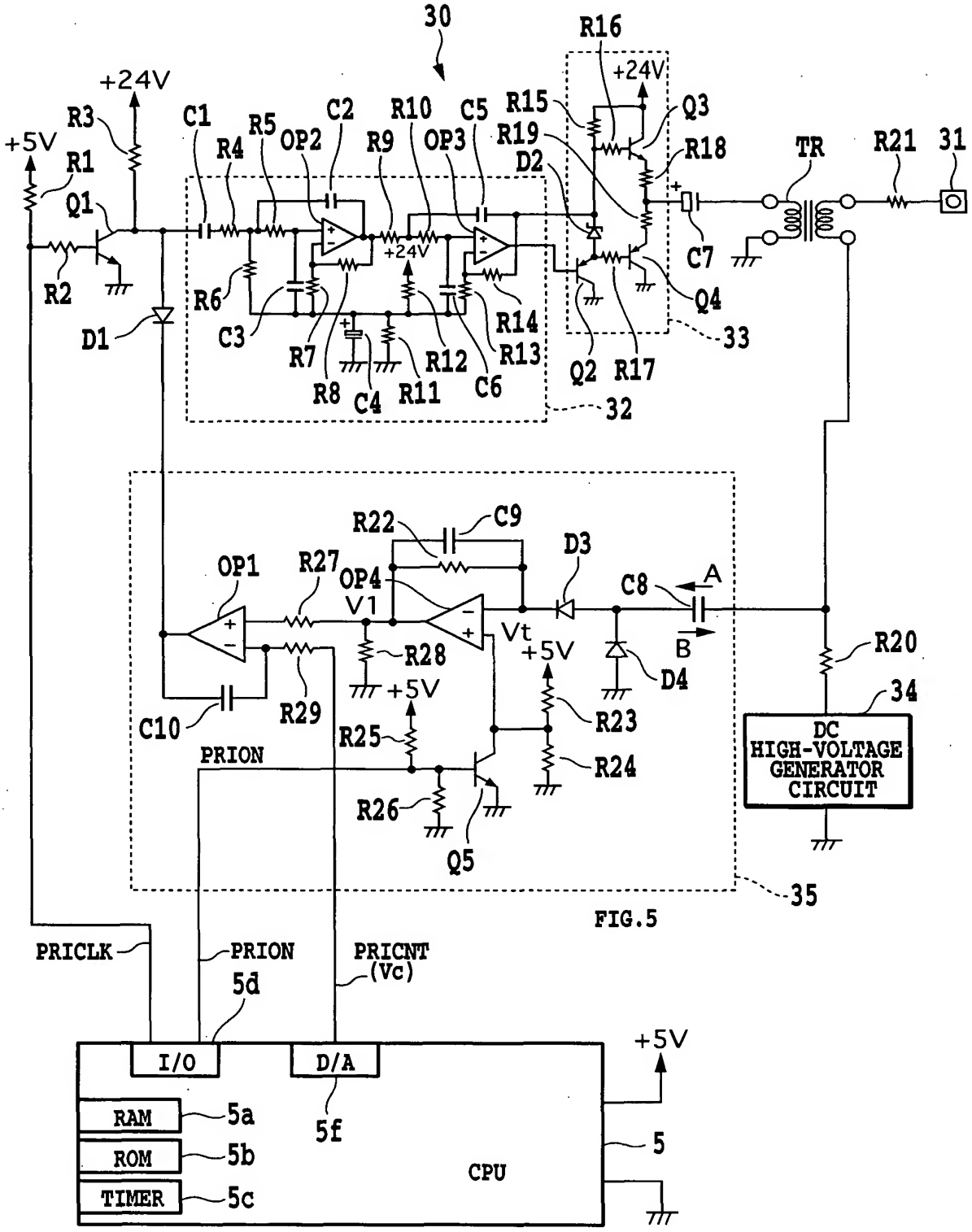
30
+24V
+5V
R3
R1
Q1
R2
D1
C1
R4
R5
OP2
C2
R6
C3
R7
R8
C4
R9
R10
OP3
C5
R11
R12
C6
R13
R14
32
R16
+24V
R15
R19
D2
Q2
R17
Q3
R18
Q4
33
C7
TR
R21
31
R22
C9
OP1
R27
OP4
V1
D3
C8
A
B
Vt
+5V
R28
D4
R20
34
C10
R29
R25
R23
R24
PRION
R26
Q5
DC HIGH-VOLTAGE GENERATOR CIRCUIT
35
PRICLK
PRION
PRICNT (Vc)
5d
I/O
D/A
5f
+5V
RAM
5a
ROM
5b
TIMER
5c
CPU
5

FIG.5

FIG.5

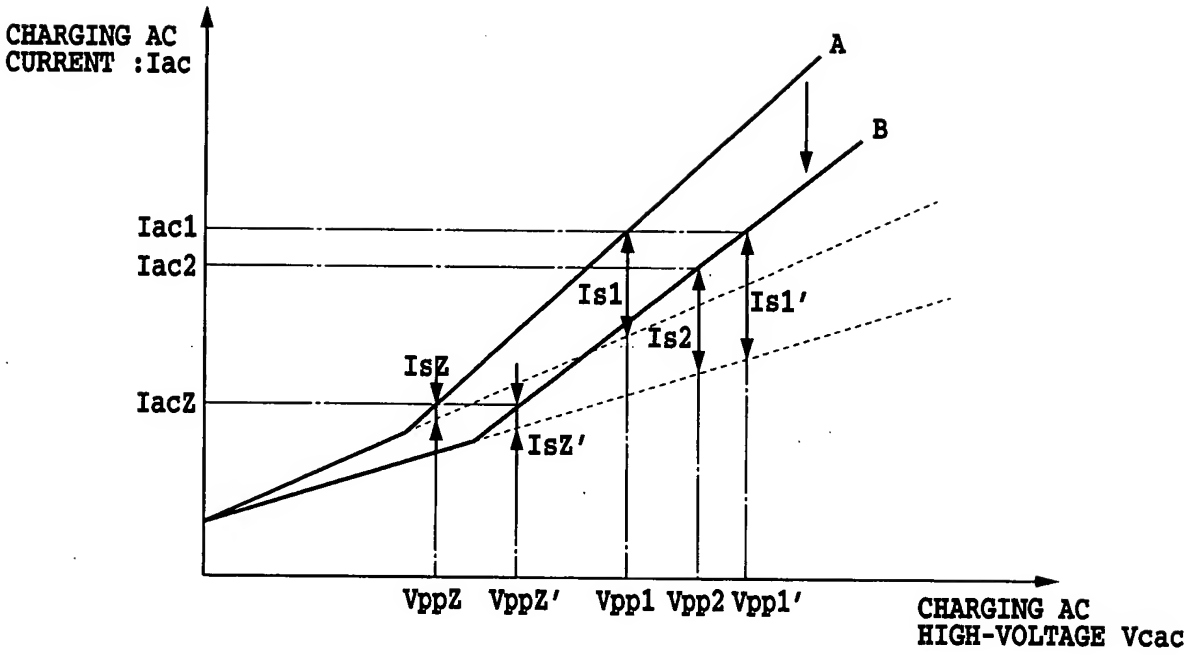
CHARGING AC
CURRENT :Iac
A
B
Iac1
Iac2
IacZ
Is1
Is1'
Is2
IsZ
IsZ'
VppZ
VppZ'
Vpp1
Vpp2
Vpp1'
CHARGING AC
HIGH-VOLTAGE Vcac

FIG.6

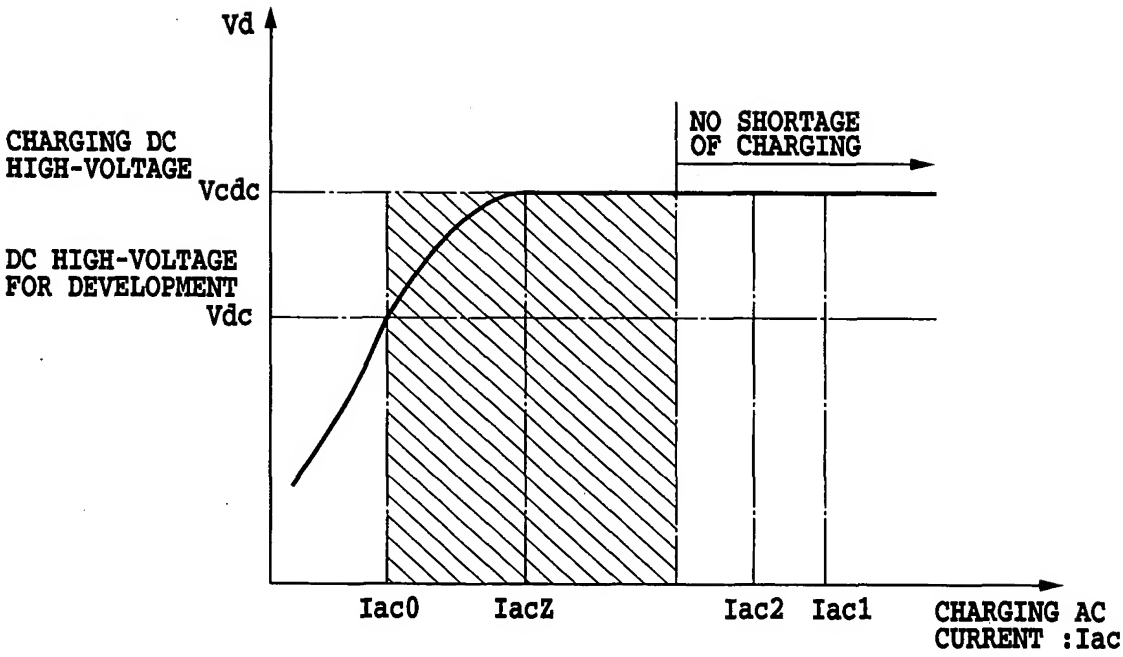
Vd
CHARGING DC
HIGH-VOLTAGE
Vcdc
DC HIGH-VOLTAGE
FOR DEVELOPMENT
Vdc
NO SHORTAGE
OF CHARGING
Iac0
IacZ
Iac2
Iac1
CHARGING AC
CURRENT :Iac

FIG.7

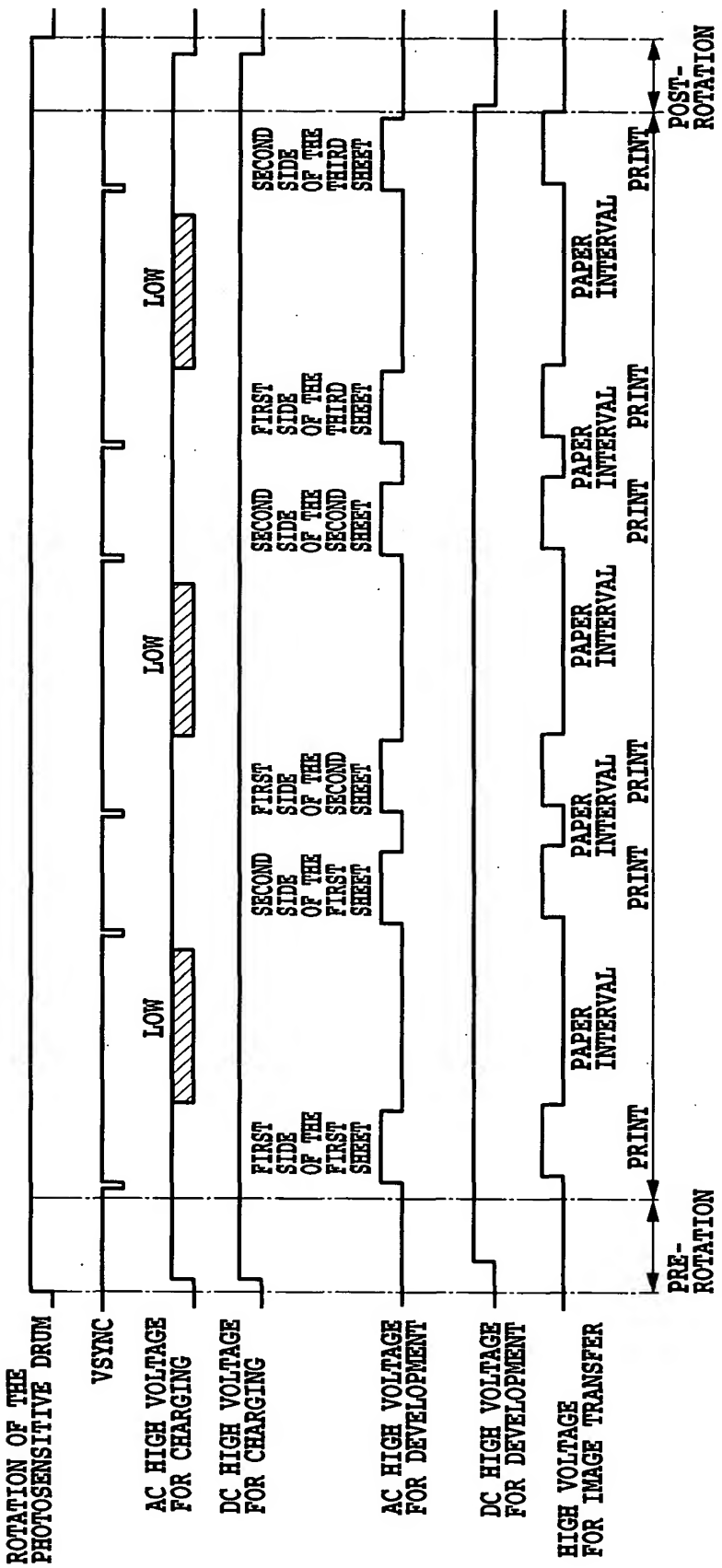
ROTATION OF THE PHOTOSENSITIVE DRUM
VSYNC
AC HIGH VOLTAGE FOR CHARGING
DC HIGH VOLTAGE FOR CHARGING
AC HIGH VOLTAGE FOR DEVELOPMENT
DC HIGH VOLTAGE FOR DEVELOPMENT
HIGH VOLTAGE FOR IMAGE TRANSFER
LOW
LOW
LOW
FIRST SIDE OF THE FIRST SHEET
SECOND SIDE OF THE FIRST SHEET
FIRST SIDE OF THE SECOND SHEET
SECOND SIDE OF THE SECOND SHEET
FIRST SIDE OF THE THIRD SHEET
SECOND SIDE OF THE THIRD SHEET
PRINT
PAPER INTERVAL
PRINT
PAPER INTERVAL
PRINT
PAPER INTERVAL
PRINT
PAPER INTERVAL
PRINT
PRE-ROTATION
POST-ROTATION

FIG.8

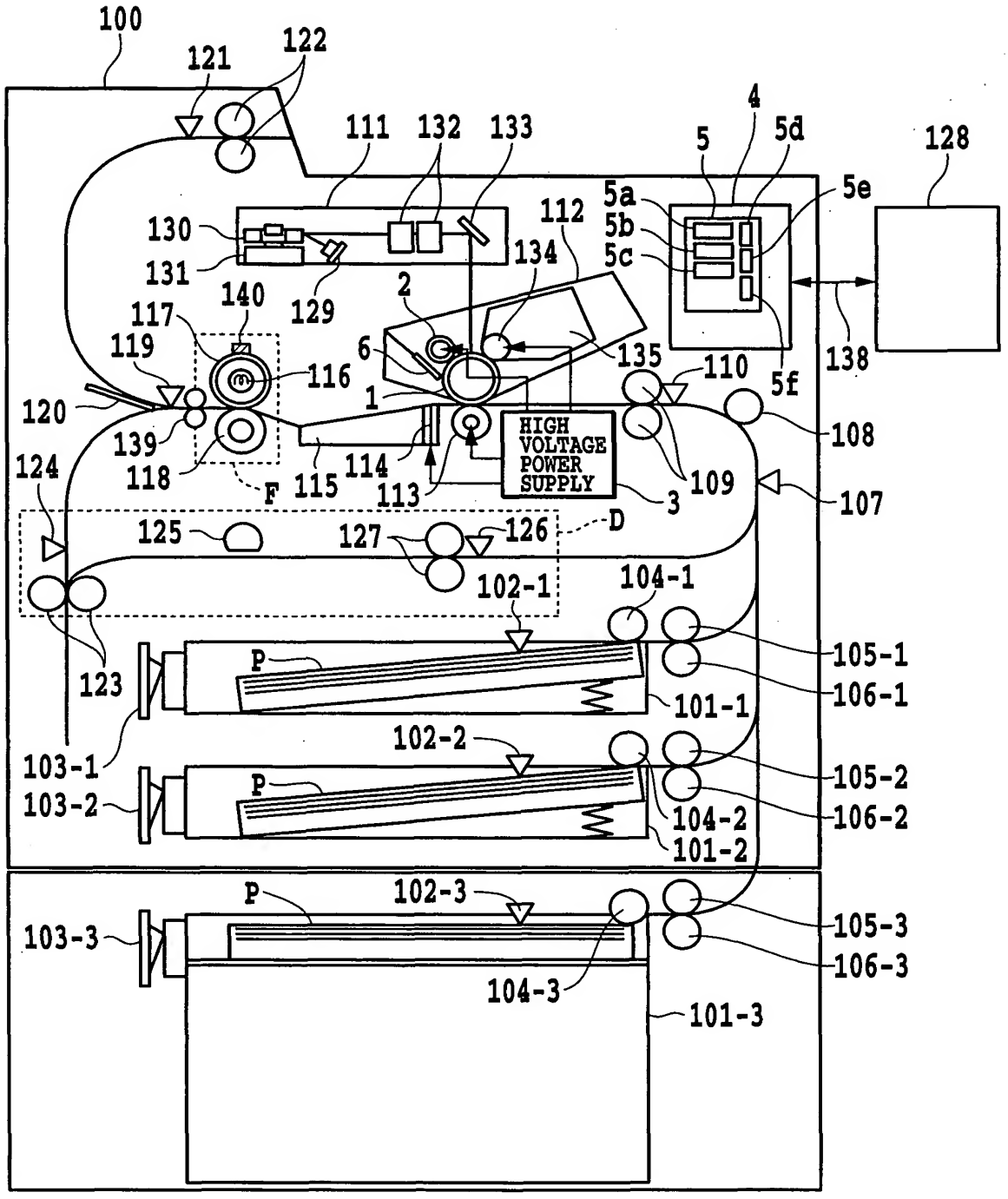
100
121
122
111
132
133
4
5
5d
128
5a
5b
5c
5e
130
131
112
134
140
129
2
117
119
6
116
135
110
5f
138
120
1
139
118
F
115
114
113
HIGH VOLTAGE POWER SUPPLY
3
109
108
107
124
125
127
126
D
102-1
104-1
105-1
106-1
123
P
101-1
103-1
102-2
105-2
103-2
104-2
106-2
101-2
102-3
105-3
103-3
106-3
104-3
101-3

FIG.9

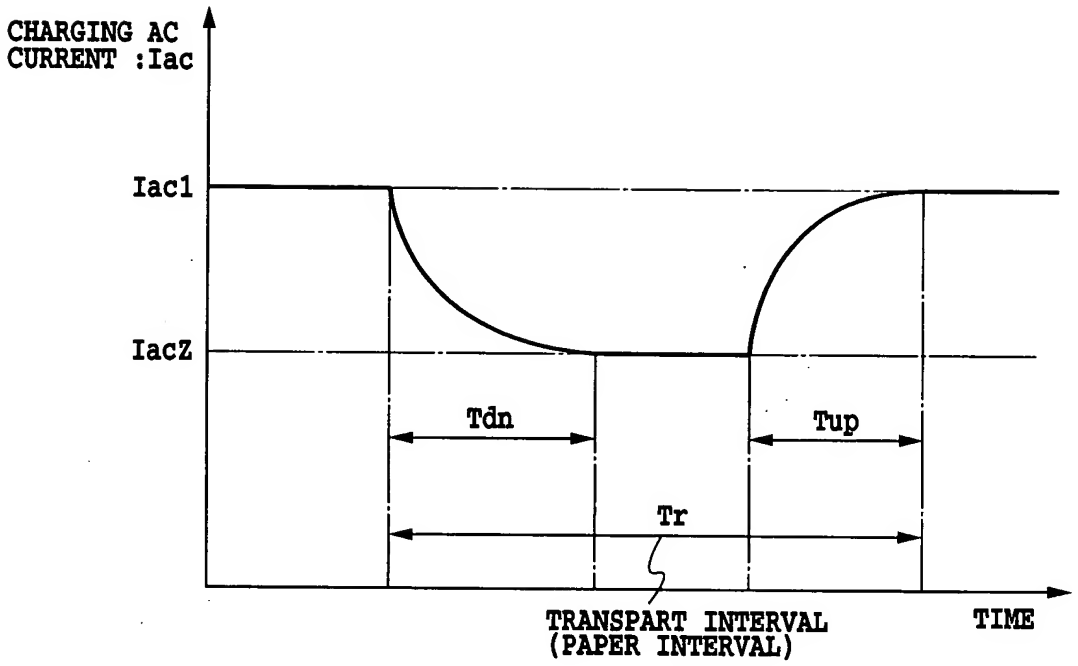
CHARGING AC
CURRENT :Iac
Iac1
IacZ
Tdn
Tup
Tr
TRANSPART INTERVAL
(PAPER INTERVAL)
TIME

FIG.10

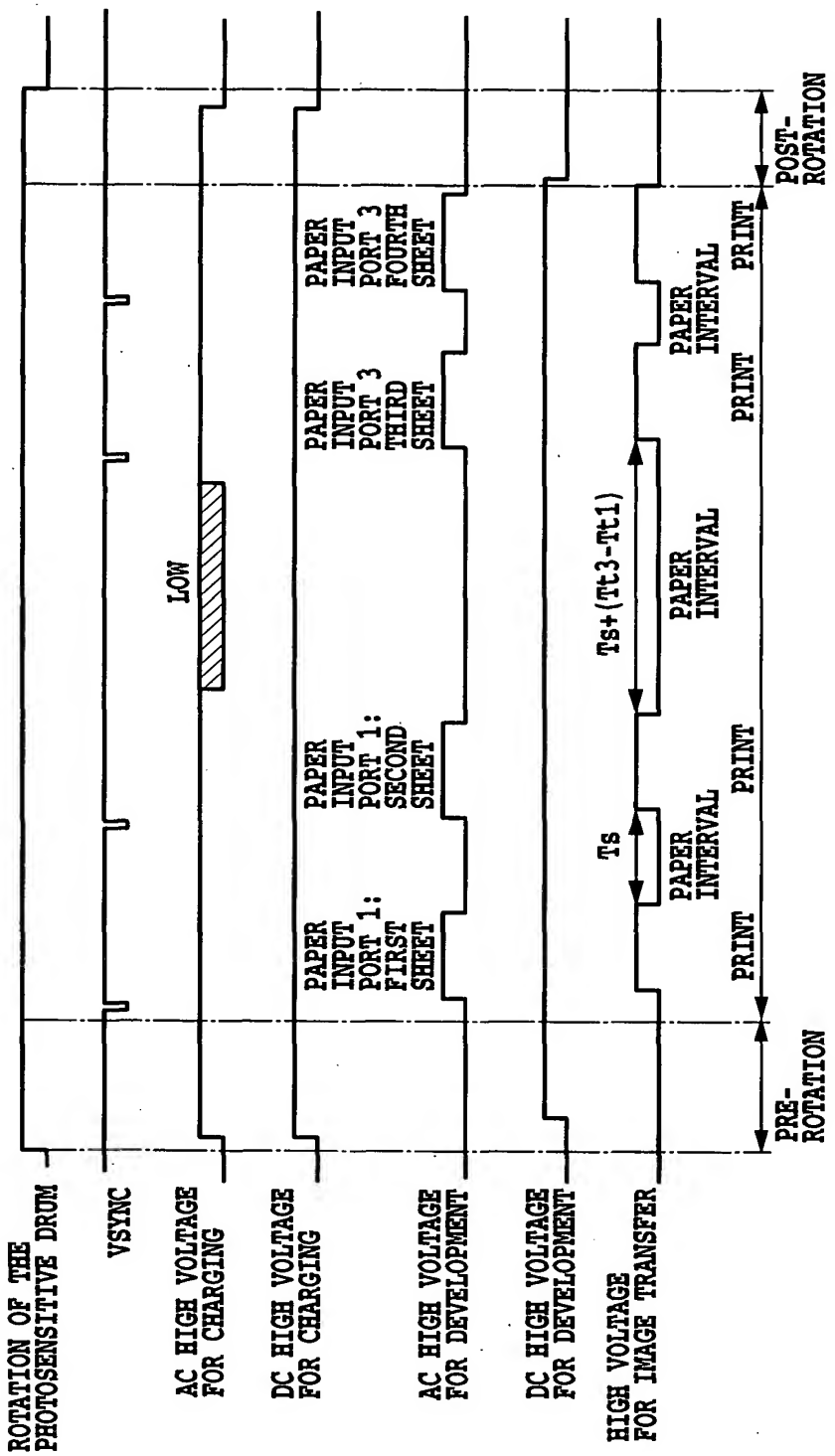
ROTATION OF THE PHOTOSENSITIVE DRUM
VSYNC
AC HIGH VOLTAGE FOR CHARGING
DC HIGH VOLTAGE FOR CHARGING
AC HIGH VOLTAGE FOR DEVELOPMENT
DC HIGH VOLTAGE FOR DEVELOPMENT
HIGH VOLTAGE FOR IMAGE TRANSFER
LOW
PAPER INPUT PORT 1: FIRST SHEET
PAPER INPUT PORT 1: SECOND SHEET
PAPER INPUT PORT 3 THIRD SHEET
PAPER INPUT PORT 3 FOURTH SHEET
Ts
Ts+(Tt3-Tt1)
PAPER INTERVAL
PRINT
PRE-ROTATION
POST-ROTATION

FIG.11

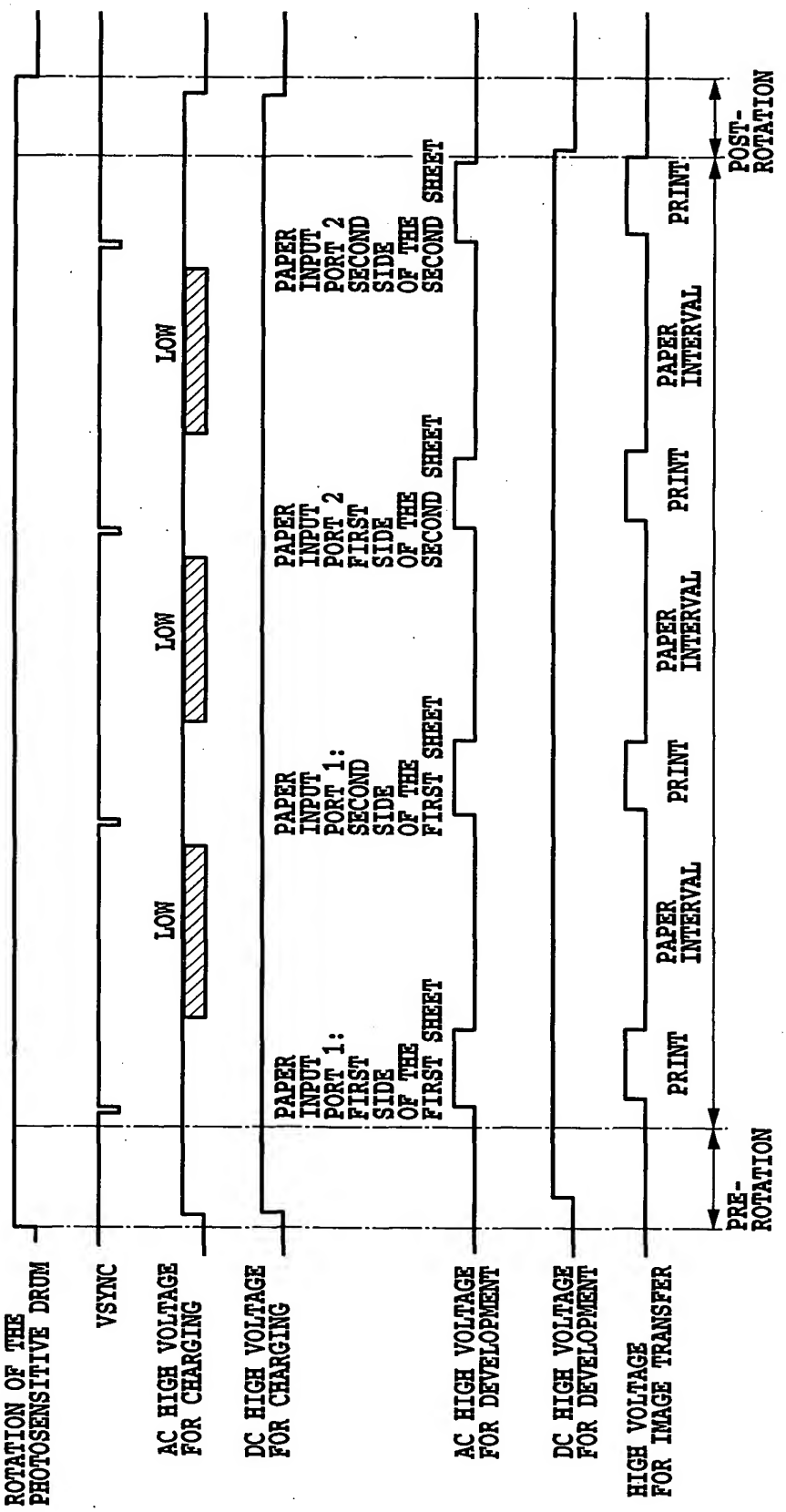
ROTATION OF THE PHOTOSENSITIVE DRUM
VSYNC
AC HIGH VOLTAGE FOR CHARGING
DC HIGH VOLTAGE FOR CHARGING
AC HIGH VOLTAGE FOR DEVELOPMENT
DC HIGH VOLTAGE FOR DEVELOPMENT
HIGH VOLTAGE FOR IMAGE TRANSFER
LOW
LOW
LOW
PAPER INPUT PORT 1: FIRST SIDE OF THE FIRST SHEET
PAPER INPUT PORT 1: SECOND SIDE OF THE FIRST SHEET
PAPER INPUT PORT 2 FIRST SIDE OF THE SECOND SHEET
PAPER INPUT PORT 2 SECOND SIDE OF THE SECOND SHEET
PRINT
PAPER INTERVAL
PRINT
PAPER INTERVAL
PRINT
PAPER INTERVAL
PRINT
PRE-ROTATION
POST-ROTATION

FIG.12

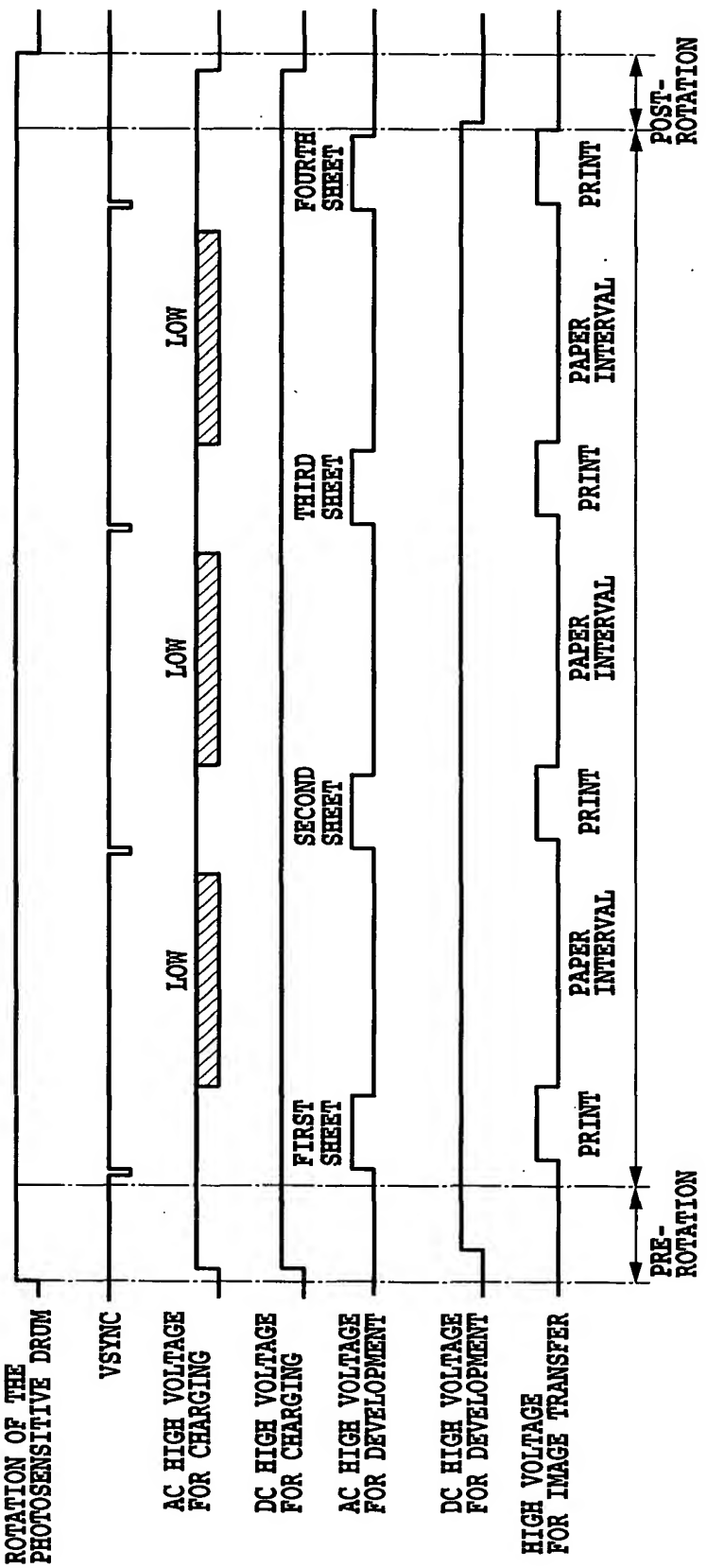
ROTATION OF THE PHOTOSENSITIVE DRUM
VSYNC
AC HIGH VOLTAGE FOR CHARGING
DC HIGH VOLTAGE FOR CHARGING
AC HIGH VOLTAGE FOR DEVELOPMENT
DC HIGH VOLTAGE FOR DEVELOPMENT
HIGH VOLTAGE FOR IMAGE TRANSFER
LOW
LOW
LOW
FIRST SHEET
SECOND SHEET
THIRD SHEET
FOURTH SHEET
PRINT
PAPER INTERVAL
PRINT
PAPER INTERVAL
PRINT
PAPER INTERVAL
PRINT
PRE-ROTATION
POST-ROTATION

FIG.13

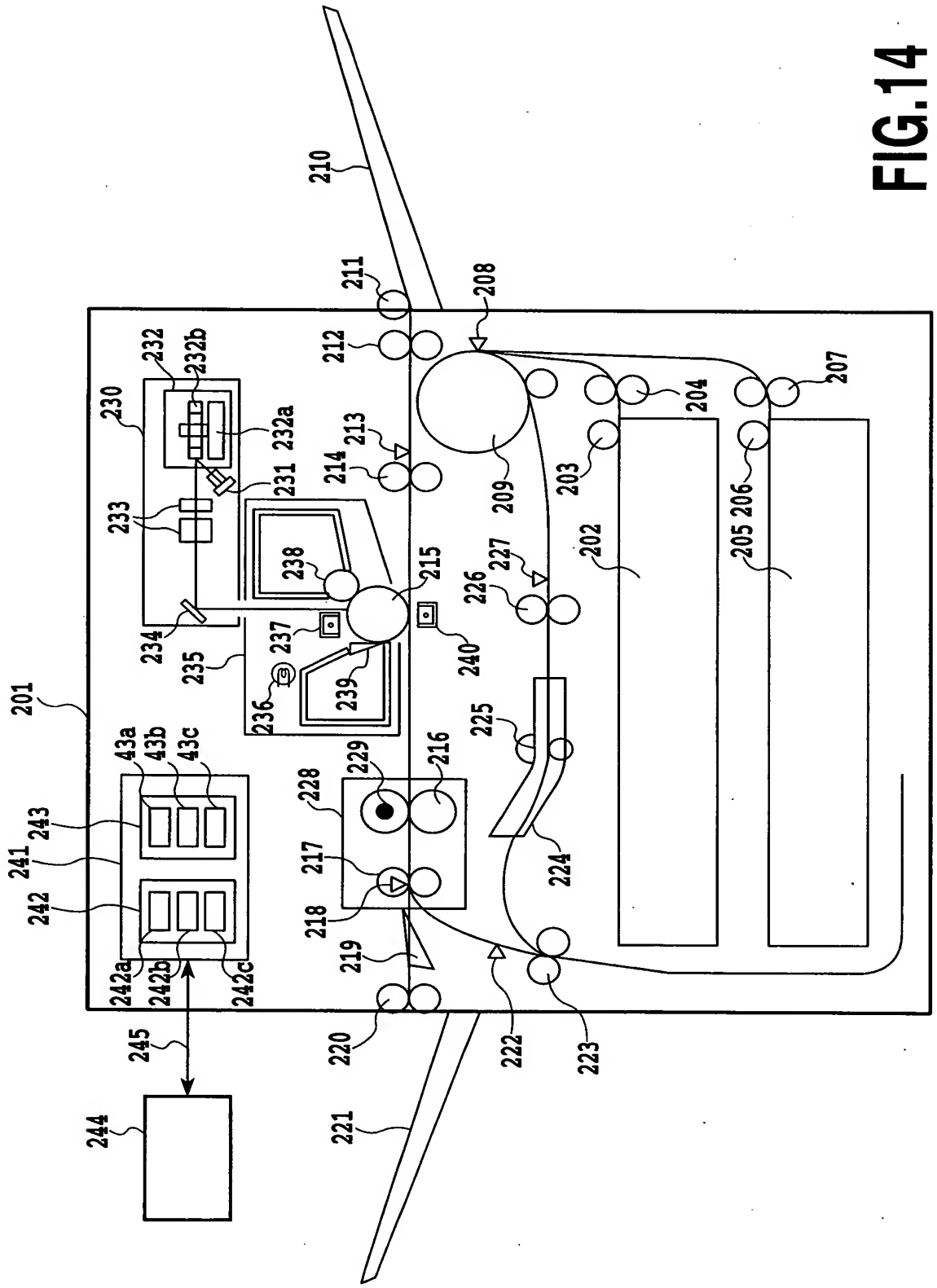
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
232a
232b
233
234
235
236
237
238
239
240
241
242
242a
242b
242c
243
43a
43b
43c
244
245

FIG.14

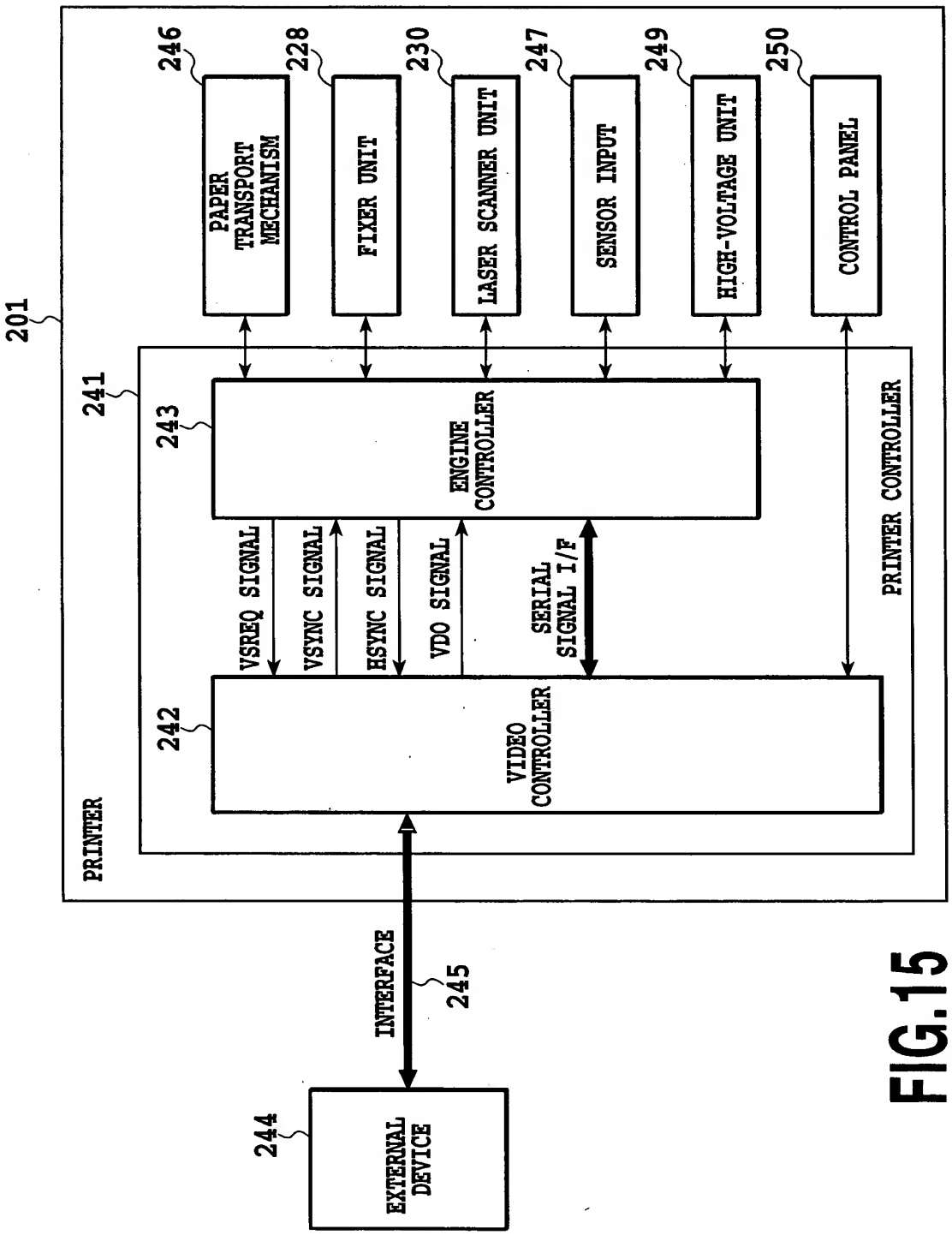
201
PRINTER
241
PRINTER CONTROLLER
243
ENGINE CONTROLLER
242
VIDEO CONTROLLER
VSREQ SIGNAL
VSYNC SIGNAL
HSYNC SIGNAL
VDO SIGNAL
SERIAL SIGNAL I/F
246
PAPER TRANSPORT MECHANISM
228
FIXER UNIT
230
LASER SCANNER UNIT
247
SENSOR INPUT
249
HIGH-VOLTAGE UNIT
250
CONTROL PANEL
INTERFACE
245
244
EXTERNAL DEVICE

FIG.15

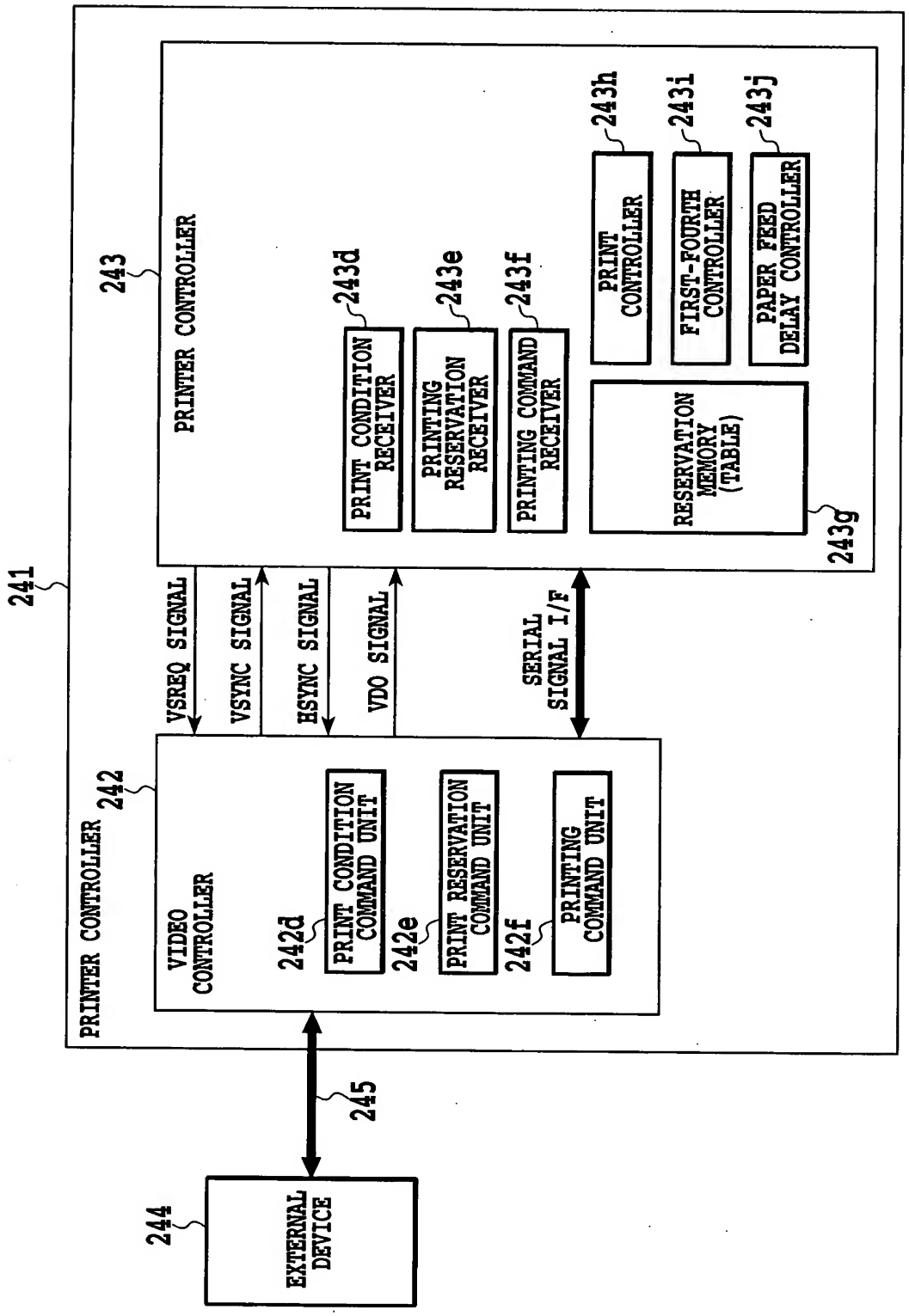
241
PRINTER CONTROLLER
243
PRINTER CONTROLLER
243d
PRINT CONDITION RECEIVER
243e
PRINTING RESERVATION RECEIVER
243f
PRINTING COMMAND RECEIVER
243h
PRINT CONTROLLER
243i
FIRST-FOURTH CONTROLLER
243j
PAPER FEED DELAY CONTROLLER
RESERVATION MEMORY (TABLE)
243g
VSREQ SIGNAL
VSYNC SIGNAL
HSYNC SIGNAL
VDO SIGNAL
SERIAL SIGNAL I/F
242
PRINTER CONTROLLER
VIDEO CONTROLLER
242d
PRINT CONDITION COMMAND UNIT
242e
PRINT RESERVATION COMMAND UNIT
242f
PRINTING COMMAND UNIT
245
244
EXTERNAL DEVICE

FIG.16

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17A

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17B

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER PRINTING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17C

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17D

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17E

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER PRINTING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17F

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER PRINTING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17G

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17H

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17I

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER PRINTING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17J

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.17K

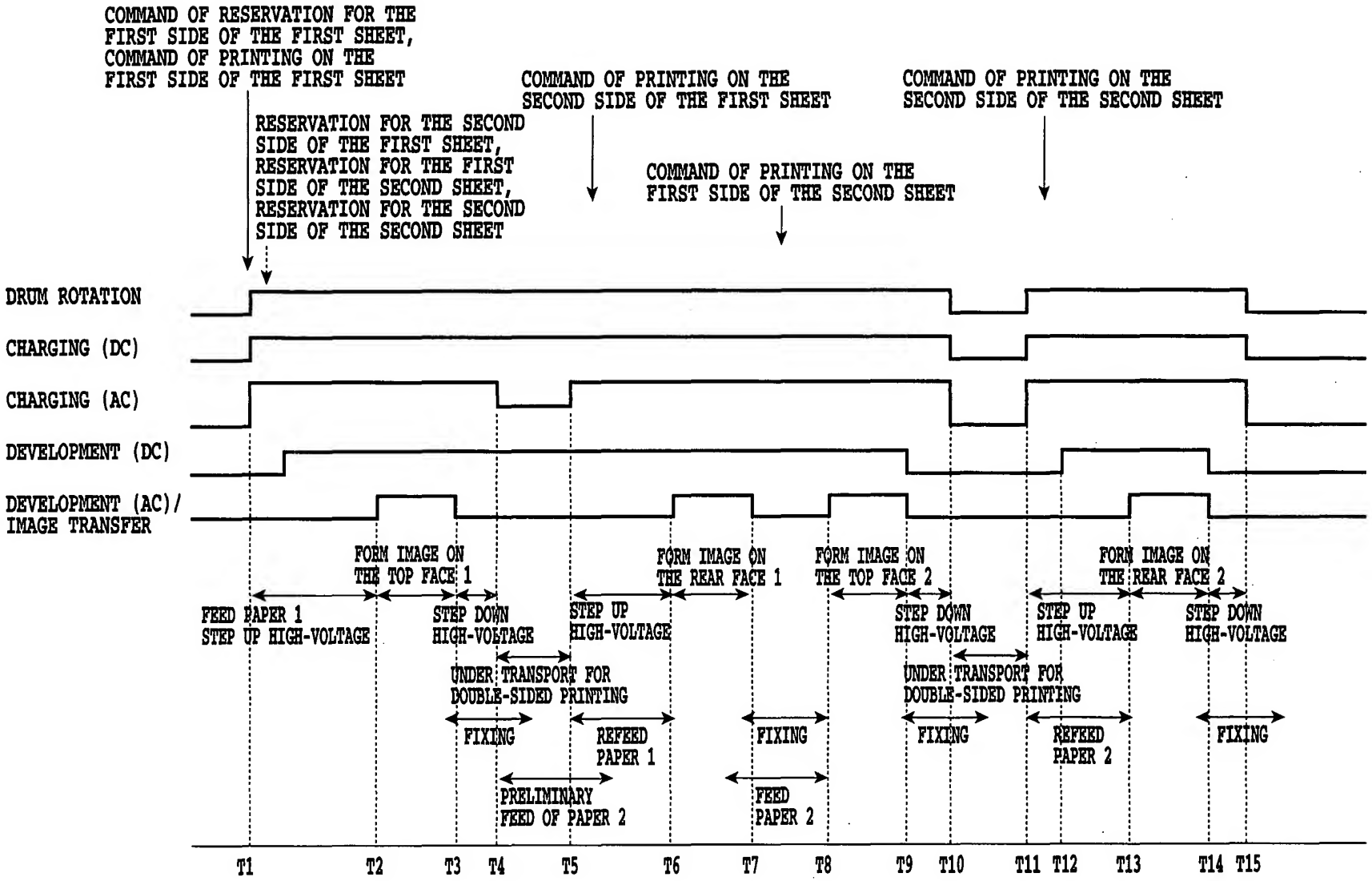
COMMAND OF RESERVATION FOR THE FIRST SIDE OF THE FIRST SHEET, COMMAND OF PRINTING ON THE FIRST SIDE OF THE FIRST SHEET
RESERVATION FOR THE SECOND SIDE OF THE FIRST SHEET, RESERVATION FOR THE FIRST SIDE OF THE SECOND SHEET, RESERVATION FOR THE SECOND SIDE OF THE SECOND SHEET
COMMAND OF PRINTING ON THE SECOND SIDE OF THE FIRST SHEET
COMMAND OF PRINTING ON THE FIRST SIDE OF THE SECOND SHEET
COMMAND OF PRINTING ON THE SECOND SIDE OF THE SECOND SHEET
DRUM ROTATION
CHARGING (DC)
CHARGING (AC)
DEVELOPMENT (DC)
DEVELOPMENT (AC)/ IMAGE TRANSFER
FORM IMAGE ON THE TOP FACE 1
FORM IMAGE ON THE REAR FACE 1
FORM IMAGE ON THE TOP FACE 2
FORM IMAGE ON THE REAR FACE 2
FEED PAPER 1
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING
FIXING
REFEED PAPER 1
FIXING
FIXING
REFEED PAPER 2
FIXING
PRELIMINARY FEED OF PAPER 2
FEED PAPER 2
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T13
T14
T15

FIG.18

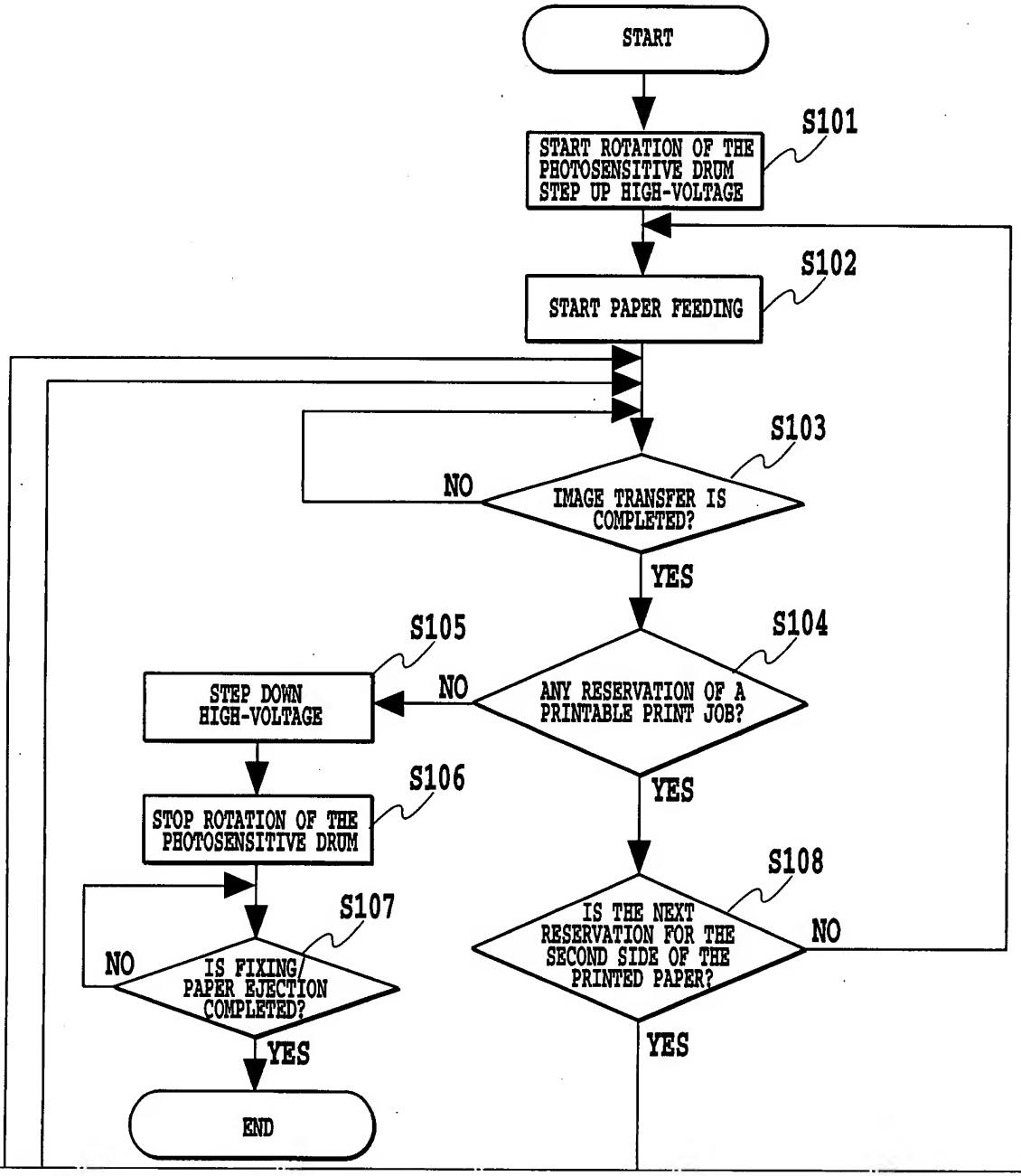

FIG.19

FIG.19A

FIG.19B

FIG.19A

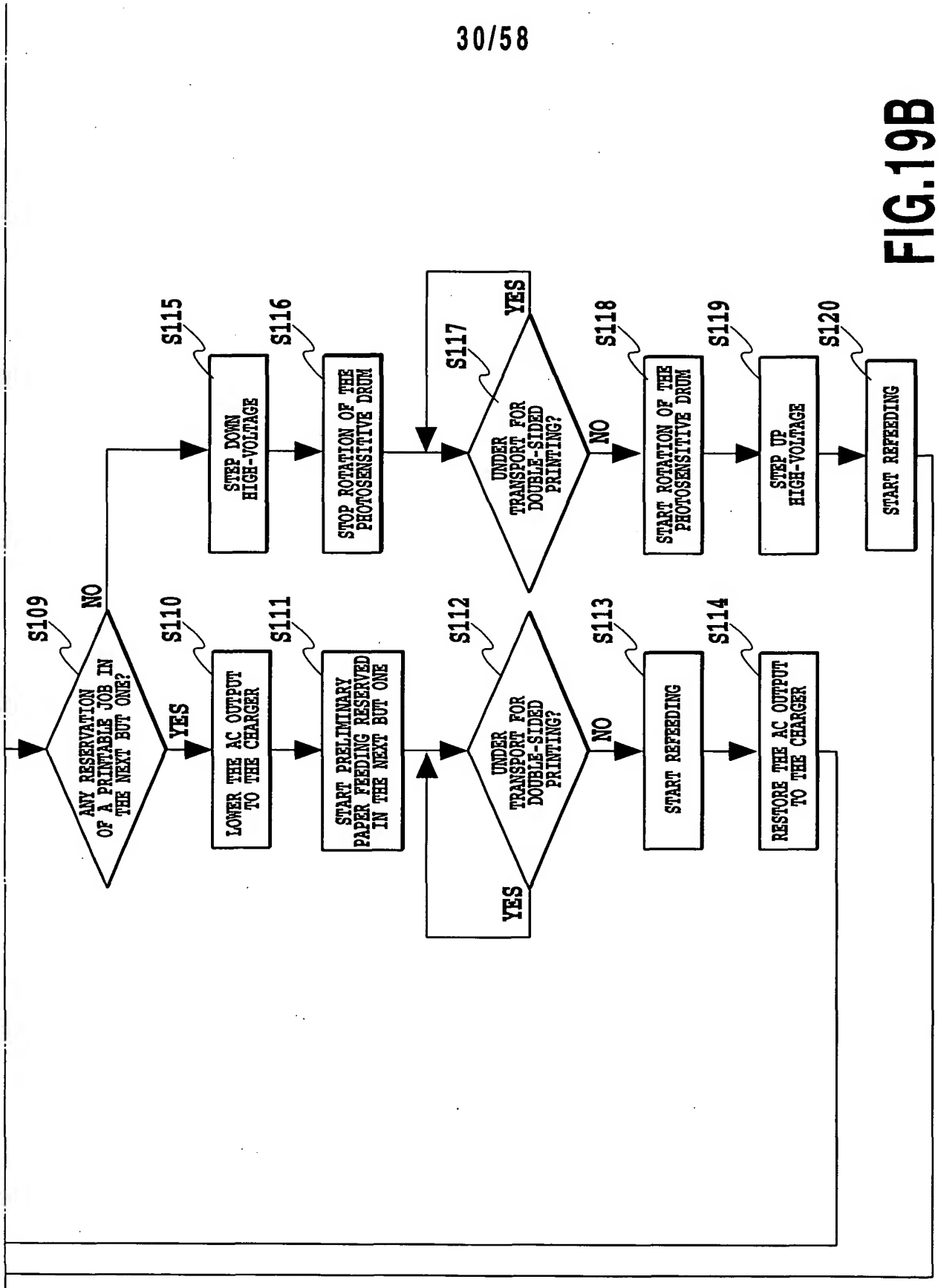
S109
ANY RESERVATION OF A PRINTABLE JOB IN THE NEXT BUT ONE?
NO
YES
S110
LOWER THE AC OUTPUT TO THE CHARGER
S111
START PRELIMINARY PAPER FEEDING RESERVED IN THE NEXT BUT ONE
S112
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING?
NO
YES
S113
START REFEEDING
S114
RESTORE THE AC OUTPUT TO THE CHARGER
S115
STEP DOWN HIGH-VOLTAGE
S116
STOP ROTATION OF THE PHOTOSENSITIVE DRUM
S117
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING?
YES
NO
S118
START ROTATION OF THE PHOTOSENSITIVE DRUM
S119
STEP UP HIGH-VOLTAGE
S120
START REFEEDING

FIG.19B

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20A

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20B

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER PRINTING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20C

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20D

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20E

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER PRINTING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20F

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER PRINTING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20G

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	PROHIBIT PRELIMINARY PAPER FEEDING
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20H

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20I

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER PRINTING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20J

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.20K

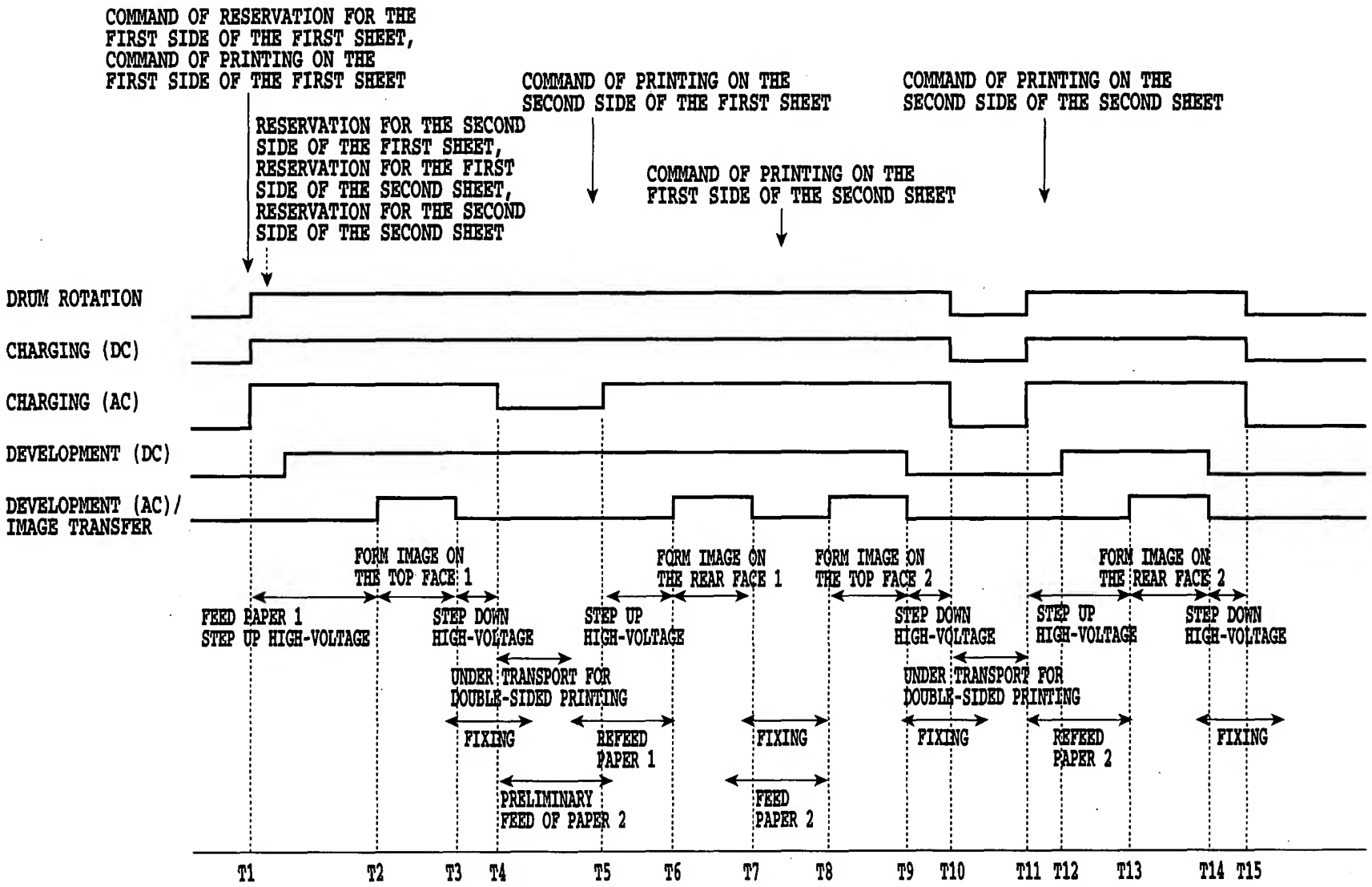
COMMAND OF RESERVATION FOR THE FIRST SIDE OF THE FIRST SHEET, COMMAND OF PRINTING ON THE FIRST SIDE OF THE FIRST SHEET
RESERVATION FOR THE SECOND SIDE OF THE FIRST SHEET, RESERVATION FOR THE FIRST SIDE OF THE SECOND SHEET, RESERVATION FOR THE SECOND SIDE OF THE SECOND SHEET
COMMAND OF PRINTING ON THE SECOND SIDE OF THE FIRST SHEET
COMMAND OF PRINTING ON THE FIRST SIDE OF THE SECOND SHEET
COMMAND OF PRINTING ON THE SECOND SIDE OF THE SECOND SHEET
DRUM ROTATION
CHARGING (DC)
CHARGING (AC)
DEVELOPMENT (DC)
DEVELOPMENT (AC)/ IMAGE TRANSFER
FORM IMAGE ON THE TOP FACE 1
FORM IMAGE ON THE REAR FACE 1
FORM IMAGE ON THE TOP FACE 2
FORM IMAGE ON THE REAR FACE 2
FEED PAPER 1 STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING
FIXING
REFEED PAPER 1
FIXING
FIXING
REFEED PAPER 2
FIXING
PRELIMINARY FEED OF PAPER 2
FEED PAPER 2
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T13
T14
T15

FIG.21

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22A

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22B

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER PRINTING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	STANDBY FOR FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22C

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22D

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER FEEDING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22E

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
1	4	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
2	4	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER PRINTING	NULL
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER FEEDING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22F

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER PRINTING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	NULL
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22G

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	PROHIBIT PRELIMINARY PAPER FEEDING
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22H

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	STANDBY FOR FEEDING	PROHIBIT PRELIMINARY PAPER FEEDING
5	14	DOWN CASSETTE	OUTPUT TRAY	A4	STANDBY FOR FEEDING	PROHIBIT PRELIMINARY PAPER FEEDING

FIG.22I

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER FEEDING	NULL
5	14	DOWN CASSETTE	OUTPUT TRAY	A4	UNDER FEEDING	NULL

FIG.22J

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
3	7	TOP CASSETTE	TURN-OVER UNIT	A4	SECOND SIDE UNDER PROCESSING	NULL
4	7	TURN-OVER UNIT	OUTPUT TRAY	A4	UNDER PRINTING	NULL
5	14	DOWN CASSETTE	OUTPUT TRAY	A4	UNDER FEEDING	NULL

FIG.22K

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
5	14	DOWN CASSETTE	OUTPUT TRAY	A4	UNDER PRINTING	NULL

FIG.22L

	PRINT CONDITION			MONITOR INFORMATION		
ORDER OF PRINTING	ID NO.	PAPER INPUT PORT	PAPER OUTPUT PORT	PAPER SIZE	CONDITION OF PRINTER	ERROR OF PRINTER
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED
0 (VOID)	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED	YET DECIDED

FIG.22M

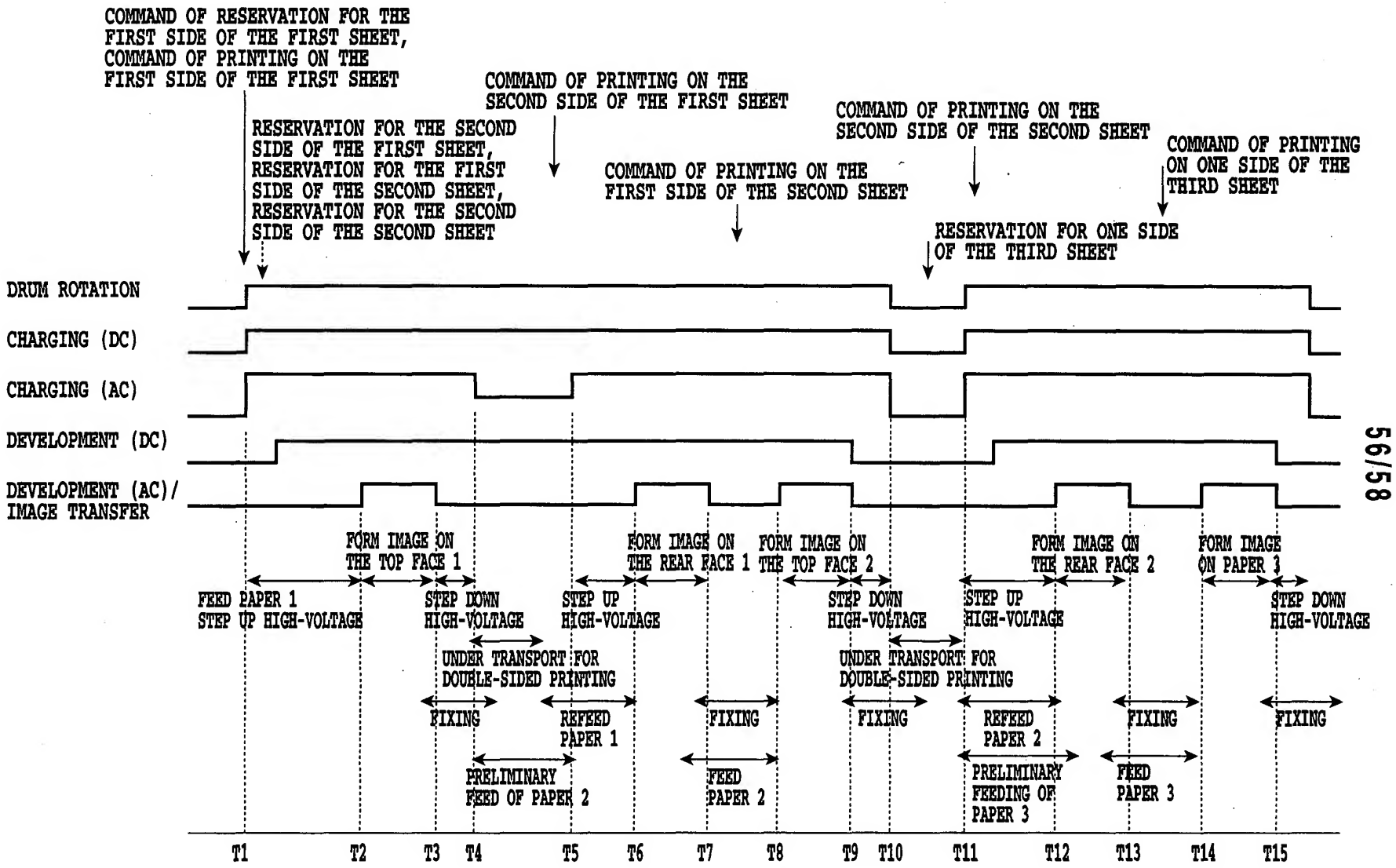
COMMAND OF RESERVATION FOR THE FIRST SIDE OF THE FIRST SHEET, COMMAND OF PRINTING ON THE FIRST SIDE OF THE FIRST SHEET
RESERVATION FOR THE SECOND SIDE OF THE FIRST SHEET, RESERVATION FOR THE FIRST SIDE OF THE SECOND SHEET, RESERVATION FOR THE SECOND SIDE OF THE SECOND SHEET
COMMAND OF PRINTING ON THE SECOND SIDE OF THE FIRST SHEET
COMMAND OF PRINTING ON THE FIRST SIDE OF THE SECOND SHEET
COMMAND OF PRINTING ON THE SECOND SIDE OF THE SECOND SHEET
RESERVATION FOR ONE SIDE OF THE THIRD SHEET
COMMAND OF PRINTING ON ONE SIDE OF THE THIRD SHEET
DRUM ROTATION
CHARGING (DC)
CHARGING (AC)
DEVELOPMENT (DC)
DEVELOPMENT (AC)/ IMAGE TRANSFER
FORM IMAGE ON THE TOP FACE 1
FORM IMAGE ON THE REAR FACE 1
FORM IMAGE ON THE TOP FACE 2
FORM IMAGE ON THE REAR FACE 2
FORM IMAGE ON PAPER 3
FEED PAPER 1
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
STEP UP HIGH-VOLTAGE
STEP DOWN HIGH-VOLTAGE
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING
FIXING
REFEED PAPER 1
FIXING
FIXING
REFEED PAPER 2
FIXING
FIXING
PRELIMINARY FEED OF PAPER 2
FEED PAPER 2
PRELIMINARY FEEDING OF PAPER 3
FEED PAPER 3
T1
T2
T3
T4
T5
T6
T7
T8
T9
T10
T11
T12
T13
T14
T15

FIG.23

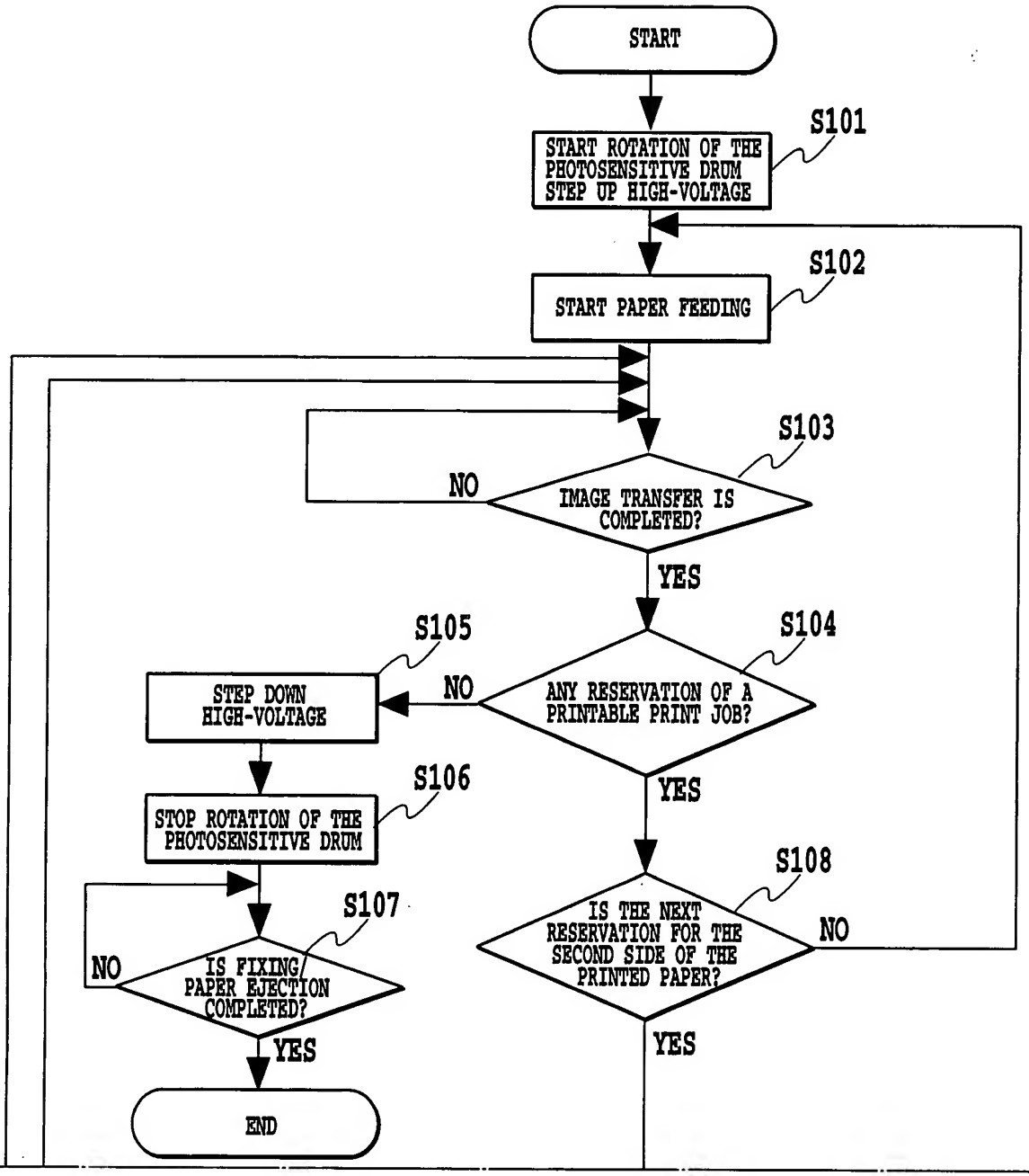

FIG.24

FIG.24A

FIG.24B

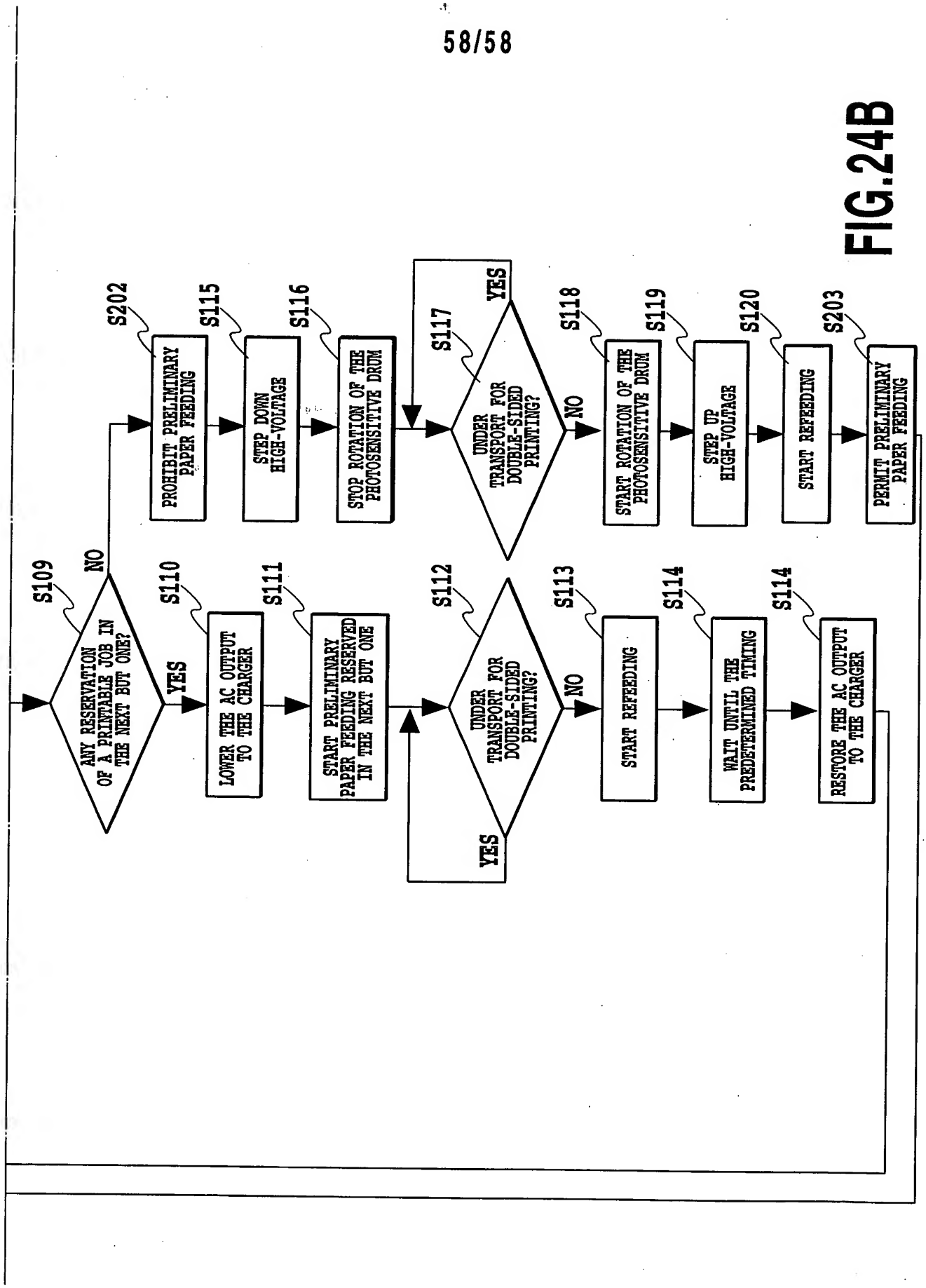
S109
ANY RESERVATION OF A PRINTABLE JOB IN THE NEXT BUT ONE?
NO
YES
S110
LOWER THE AC OUTPUT TO THE CHARGER
S111
START PRELIMINARY PAPER FEEDING RESERVED IN THE NEXT BUT ONE
S112
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING?
YES
NO
S113
START REFEEDING
S114
WAIT UNTIL THE PREDETERMINED TIMING
S114
RESTORE THE AC OUTPUT TO THE CHARGER
S202
PROHIBIT PRELIMINARY PAPER FEEDING
S115
STEP DOWN HIGH-VOLTAGE
S116
STOP ROTATION OF THE PHOTOSENSITIVE DRUM
S117
UNDER TRANSPORT FOR DOUBLE-SIDED PRINTING?
YES
NO
S118
START ROTATION OF THE PHOTOSENSITIVE DRUM
S119
STEP UP HIGH-VOLTAGE
S120
START REFEEDING
S203
PERMIT PRELIMINARY PAPER FEEDING

FIG.24B